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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/754,950

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Chiang Sun Cheah

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P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

BENNETT, JENNIFER D

ART UNIT

PAPER NUMBER

2878

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/754,950	<b>Applicant(s)</b> CHEAH ET AL.	
	<b>Examiner</b> JENNIFER BENNETT	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,12,13 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,12,13 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 2, 2009 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1, 2, 4-9, 12, 13, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda (US 5640005) in view of Mengel et al. (US 6373557).

Re claims 1 and 12: Oda teaches a system for timing an image acquisition (see fig. 1 and 4), comprising: a source controller (12) triggering an optical source to illuminate a target (see fig. 1 and S3 in fig. 4); a delay block (2) coupled to the source controller (12), imposing a delay interval starting at the triggering of the optical source (S1, fig. 4 and col. 3, lines 65-67), the delay block triggering an image acquisition at the end of the delay interval (col. 4, lines 5-12), and the delay interval defines an optical charge pulse that provides light to a sensor prior to triggering the image acquisition (see

Art Unit: 2878

S1 and S2), wherein the optical pulse charges the sensor to stabilize photocurrent in the sensor, and the sensor provides the image acquisition (col. 4, lines 5-12, waits while reflected light stabilizes on the photodetector). Oda does not specifically mention the compensation of the dark current and does not teach wherein after the image acquisition the source controller turns the optical source and the image acquisition off, so that the on-time period of the optical source is longer than an on-time period of the image acquisition. Mengel teaches a system for timing an image acquisition (col. 2, lines 17-20), comprising: a source controller (8) triggering an optical source to illuminate a target during an on-time period ( $\Delta L$ ) and imposing a delay interval starting at the triggering of the optical source (col. 4, lines 41-44 and claim 8 and 29), the delay block triggering an image acquisition at the end of the delay interval ( $\Delta A$ ), wherein after the image acquisition the source controller turns both the optical source and the image acquisition off (fig. 7, the transmitted pulse and the integration period  $\Delta A$  are turned off at the same time, or see fig. 8 short integration time), so that the on-time period of the optical source is longer than an on-time period of the image acquisition (col. 4, lines 37-41), and the delay interval defines an optical charge pulse that provides light to a sensor prior to triggering the image acquisition, wherein the optical charge pulse charges the sensor to compensate for dark current discharge in the sensor, and the sensor provides the image acquisition (see fig. 8 and col. 10, lines 13-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to shorten the integration time as in Mengel with the stabilization of the photocurrent in

Art Unit: 2878

Oda in order to create a smoother image that compensates for dark current and stabilizes the photocurrent providing for a higher quality detection system.

Re claim 2: Oda as modified by Mengel teaches the system (Oda, fig. 4) wherein triggering the optical source to illuminate the target includes detecting a transition that turns the optical source off (S3 the fall from H position), imposing a delay period that starts at the detected transition (S3 the L position), and actuating a trigger at the end of the delay period for triggering the optical source to illuminate the target (at the end of L and through the signal S1 the optical source is turned back on S3).

Re claim 4: Oda as modified by Mengel teaches the system wherein the source controller provides first control signal (S1) to the optical source (13) and to the delay block (2), and wherein the delay block generates a second control signal (S2) in response to the first control signal (Mengel, see fig. 1).

Re claim 5: Oda as modified by Mengel teaches the system wherein the first control signal includes a first transition (the down portion of S1) triggering the optical source to illuminate (Oda, col. 3, lines 65-67) the target and a second transition (the up portion of S1) that turns the optical source off (Oda, col. 3, lines 65-67).

Re claims 6 and 7: Oda as modified by Mengel teaches the system wherein the second control signal (S2) includes a transition triggering the image acquisition at the end of the delay interval (Oda, delay interval dotted lines, col. 4, lines 5-7).

Re claim 8 and 9: Oda as modified by Mengel teaches the system (Mengel, fig. 1) wherein triggering the image acquisition includes providing the second control signal

Art Unit: 2878

to an image processor (col. 2, lines 20-23 and col. 7, lines 26-37) within an optical imaging system (Mengel, fig. 1 and 4).

Re claim 13: Oda teaches the system (fig. 4) wherein triggering the optical source to illuminate the target includes detecting a transition that turns the optical source off (S3 the fall from H position), imposing a delay period that starts at the detected transition (S3 the L position), and actuating a trigger at the end of the delay period for triggering the optical source to illuminate the target (at the end of L and through the signal S1 the optical source is turned back on S3).

Re claim 16: Oda teaches the method wherein the triggering the optical source to illuminate (col. 3, lines 65-67) the target is provided by a first transition (the down portion of S1) and the turning the optical source off (col. 3, lines 65-67) is provided by a second transition the up portion of S1).

Re claim 17: Oda teaches the method further comprising providing a first control signal triggering the optical source to illuminate the target (S1 the fall triggers the illumination signal S3).

Re claim 18: Oda teaches the method (fig. 4) further comprising providing a first control signal that provides the first transition (S1 the rise) and the second transition (S1 the fall).

Re claim 19: Oda teaches the method further comprising providing a second control signal (S2) in response to the first control signal (See fig. 1), the second control signal triggering the image acquisition at the end of the delay interval (col. 4, lines 5-10).

Re claim 20: Oda teaches the method further comprising providing a second control signal (S2) in response to the first control signal (S1) (see fig. 1), the second control signal triggering the image acquisition at the end of the delay interval (see fig. 4).

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1, 2, 4-9, 12, 13, and 16-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER BENNETT whose telephone number is (571)270-3419. The examiner can normally be reached on Monday - Friday 0730 - 1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2878

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./

/Georgia Y Epps/  
Supervisory Patent Examiner, Art Unit 2878